Abstracts

Design of Waveguide E-Plane Filters with All-Metal Inserts

Y.-C. Shih. "Design of Waveguide E-Plane Filters with All-Metal Inserts." 1984 Transactions on Microwave Theory and Techniques 32.7 (Jul. 1984 [T-MTT]): 695-704.

Waveguide E-plane filters with all-metal inserts are designed by a procedure based on the reflection coefficients of axial inductive strips. The scattering matrix, representing the junction in a bifurcated waveguide, is calculated by a mode-matching method. The reflection coefficient for an inductive strip is then obtained by cascading two scattering matrices separated by a distance equal to the stripwidth. The design is valid up to moderate bandwidths, except for the narrowband design at the higher waveguide frequency range, where both the center frequency and the bandwidth are inaccurate. Possible sources of error are studied and a method minimizing the error is proposed.

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